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PATHOLOGICAL PHYSIOLOGY.

THE CONTINUOUS VENOUS MURMURS IN THE NECK.

*Clinical Lectures delivered at the Hospital "La Charité," by
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of Medicine, Paris.*

TRANSLATED EXPRESSLY FOR THE JOURNAL, BY WALTER HAY, M.D.,
CHICAGO.

GENTLEMEN :—This clinical lecture, which will be the last, suggests the approach of vacation, and the paucity of subjects.

I shall devote myself to treating, for your benefit, a question at once theoretical and practical, reviewing as clearly as possible a doctrine which is based upon numerous experiments, and upon facts which it has been easy for you to establish daily at the bedside of the sick.

It concerns the continuous murmurs which have their seat in the neck, and particularly on the right side. I will point out to you hereafter their cause.

The extreme frequency of these sounds, and the progress which the theory of their mode of production has made, render their clinical study necessary.

I do not intend to give you a very complete history of them,

but in consequence of errors imprinted in certain books, and in recent memoirs, it is right that I devote myself to making you acquainted with the truth, from the opinions of men who have best studied these phenomena, and have given a clear theory of them, founded upon the laws of acoustics, upon ideas received, especially respected, and in relation with numerous experiments, with undeniable facts, whose interpretation can not be permitted to be changed.

Two sorts of sounds occur in the vessels of the neck: an intermittent and a continuous sound; the continuous sound, with swells, appears to be nothing else than the continuous sound duplicated with an intermittent one.

Now, under the reign of Læennec—and his opinions prevailed a long time after him—it was conceded that all these sounds could only be produced in the arteries, in the heart, and in the large vessels proceeding therefrom.

Ogier Ward, in 1837, was the first who expressed the opinion that the vascular sounds of the neck were continuous sounds, which occurred in the veins, and not in the arteries. Almost as soon, Hope adopted his theory, and gave to it the success which could be impressed upon it by a man who had so great a renown in the history of diseases of the heart. This theory became universal in England.

Aran was the first in France who rallied to the support of this theory in 1843. After him, I may consider myself as the one who has studied it most completely in all its details, and taught it, in the year 1847. At this epoch it occurred to me, for reasons drawn from the laws of acoustics, and from the works of Savart and Cagnard-Latour, that there could be a continuous sound only in the veins.

Hence a series of experiments, which I instituted since the year 1847, at the Hospital Bon-Secour, with the view to determine the influence which the sanguineous fluid, put in motion in a tube, could have upon continuous sonorous vibrations, and especially the influence of the composition of the liquid upon the intensity of these vibrations.

The results at which I arrived, furnished matter for four

memoirs, which appeared consecutively in the "Medico-Chirurgical Review" of 1850, in March, April, July, and August. All this work was especially designed to prove that the continuous vascular murmurs of the neck—the only ones about which there can be any question—have their seat in the large veins of the neck, and their cause in the liquid which flows through them; that is to say, in the blood, of which the composition may vary.

A sound is produced each time that the sanguineous fluid moves in the vessel with a certain speed, moistening its walls, as in anæmia.

This sound is by so much the stronger as the blood is the poorer in globules. Aside from anæmia, and from diminution of the globules, there is never any murmur. As we shall see that the diminution in the globules produces necessarily an augmentation in the serosity, even as far as 100 to 200 parts in 1,000 parts of blood. We can understand that all the sanguineous liquid so altered by the serum should produce a continuous sound in the veins, where alone the blood flows with sufficient rapidity and continuity, near the outlet of the vena cava, to produce this sound.

It is a grave error to say that plethora can engender it. It is necessary to know how to distinguish true from false plethora. Since the date of the memoir above mentioned, I have never revoked my opinion; I have constantly maintained it in my course of internal pathology in the school of practice where I have passed in review every theory. Later, in 1861, I reproduced, with renewed assurance, with new force of conviction, this same idea that the continuous sound could only have its seat in the veins, in the heart, at the mouths of the great veins of the neck, and that it could only develop itself there, under the influence of an anatomical arrangement upon which I shall insist hereafter. I desire to establish firmly the point, in order that you may perceive that during nineteen years I have always expressed the same opinion, based upon the experiments of physicians who have promulgated the true laws of acoustics.

Savart and Cagnard-Latour did not hesitate about the mode of production of these venous murmurs; they understood, at once, the necessity of applying to the region of the neck, the propositions which they had formulated for liquids foreign to the economy. Moreover, we can find no explanation more lucid than that which they have given.

After what has just been said, you will, perhaps, be astonished, upon opening a memoir recently published by M. Parrot, in the "Archives of Medicine" for July, 1867, to find these assertions counter to those which I myself have sought, not because I am their source. It is not I who am the inventor of the theory which I sustain, but because it is just to refer to their true authors, the ideas which they have promulgated. I would remark to M. Parrot that he is completely in error, when he asserts that Chauveau, and then Marey, are the only authors who have sought to attribute the venous murmurs to the composition of the liquid, and the diminution of tension of the vessels.

This is false. The memoirs already mentioned of 1850, reproduce minutely all the experiments which have been made, in order to account for the bellows sounds of the veins. They point out their causes much before these two authors, I will say more, at an epoch long anterior to them.

Savart, in 1830, Cagnard-Latour in 1833, had published the laws which govern the production of these murmurs, by building upon acoustics, theories the most clear and most sure.

These theories are accepted by all, not only in medicine, but in physics; no one is ignorant of them, I will not, therefore, dwell upon them.

The Experiments, published by Dr. Laharpe, in "L'Archives Generales de Medicine," have for their subject the influence of the composition of different liquids upon the production of sounds, and we find there, studied with extreme detail, every thing concerning the vibration of liquids according to their composition, upon which he makes the sounds to depend.

I come now to the study of these sounds, but before going further I must point out to you two conditions which are

essential to them : The one is their normal anatomical state, the other their pathological.

Recall what you already know, that the continued vascular murmur exists only on the right (it is clear that I do not speak of arterio-venous aneurisms), to the serious study of which, moreover, I have devoted myself in a memoir presented to the Surgical Society upon the subject of an arterio-venous perforation formed in the popliteal space. There were two sounds, one a continuous sound, the other a swell, and I demonstrated that the continuous sound occurred in the vein, whilst the swell sound was nothing else than an intermittent bellows murmur which occurred in the artery.

I repeat, then, that in the region of the neck, the venous murmur occurs always on the right ; if by chance it is not so, and the sound makes itself heard on the left, it is by transmission, and because it is then sufficiently intense to transmit itself from that side. The stethoscope detects very readily upon the left side the sound which is formed on the right. I have, moreover, never found this sound elsewhere, neither over the arteries nor the veins of the lower extremities, nor over the other large vessels.

In the next place the vascular sound is the effect of an alteration occurring in the composition of the blood.

Every time that, in a healthy individual, and who consequently exhibits no vascular sound, the blood becomes altered in such a way that it moistens the internal walls of the veins, it produces a sound. The liquid begins to speak. To sum up : The alteration of the blood engenders a sound, a special anatomical arrangement gives origin to this sound, and to localize it in the right side.

It is this anatomical arrangement which I shall now attempt to discuss in a few words.

Three aponeurotic planes exist in the neck. The first, the most superficial, is easily seen in subjects who have little fat. The external jugular rests upon this aponeurosis, in the upper three-fourths of its extent ; below this it penetrates it, in order to return into the subclavian fossa, on the internal

surface it unites in order to empty itself into the subclavian vein. It results from this, that this vessel, sustained by the aponeurosis, is continually distended in certain positions which are given to the head in turning it; then the sanguineous fluid rushes through it with its maximum speed. Thus, this membrane should be stretched in order to produce the vibratory trembling, a phenomenon completely parallel to the venous sounds, and derived from the undulatory vibrations.

The second plane is known under the name of middle or omo-hyoid aponeurosis; it connects the two scapulo-hyoid muscles, and is inserted into the sternum, and into the inner border of the clavicle, enclosing in its reduplication the muscles of the sub-hyoid region, and the anterior jugulars.

According to Mr. Richet, who has described with particular care the middle aponeurosis of the neck, this membrane sends out from its lower surface, fibrous prolongations, which attach themselves to the trunks of the right and left brachio-cephalic veins, and fix them to the upper bony rim of the chest. It receives then, in a reduplication, at the level of their opening into the subclavian vein, the internal and external jugular veins.

M. Richet, by reason of this arrangement, assigns to the extensor muscles of the omo-hyoid aponeurosis, the function of maintaining distended all the great veins of the region, and of thus rendering the circulation as easy as possible.

The third plane is that which exhibits the most intimate and most important connections with the vessels of the neck. It assumes an arrangement entirely peculiar, whose connections have been very recently clearly displayed by M. M. Ledentu and Lannelogue, who have had the merit of demonstrating clearly the existence of these aponeuroses, and their arrangement, which it is easy to comprehend by casting the eye over the anatomical specimens prepared by the authors whom I have just named, with this intention.

An aponeurotic layer detaches itself from the lower edge of the thyroid-body, descends in front of the trachea, passes

behind the sternum, in front of the left brachio-cephalic vein, and is inserted upon the anterior face of the pericardium.

Laterally this fibrous leaf is inserted into the internal concave border of the first rib, and higher up it throws itself upon the internal jugular veins of which it forms the enveloping sheath.

But whilst the sheath is simply cellular above the middle part of the neck, in the lower part of that region it is very resistant at the confluence of the subclavian and the right internal jugular, where it forms a fibrous ring adherent to the first rib by one part, to the veins by the other. Not far from this confluence the external jugular empties into the subclavian. This one adheres equally to the former fibrous plane.

This costo-pericardiac ligament is then the true fibrous band which keeps distended the openings of the veins of the lower part of the neck. Moreover, from the lateral part of its deep surface, near its insertion into the first rib, originate two fibrous ligaments, which attach themselves to the brachio-cephalic venous trunks, even in the thorax, and playing, relatively to these veins, the part of suspensory ligaments, preventing their walls from collapsing during the thoracic inspiration.

The inferior thyroïdal veins, also perforate this ligament, which forms for them a sort of fibrous semi-canal at the level of their outlet.

To sum up: there exists in the neck, and it is this point which I wish to bring prominently before you, a resisting plane, which sustains the whole venous mass, and maintains distended the superior vena-cava, the right and left brachio-cephalic venous trunks, and the confluence of these two trunks, which is situated to the right and not to the left, exactly in the direction of the brachio-cephalic trunk of that side, which is continuous directly, it should be remembered, with the vena-cava superior.

It is towards this confluence, cylindrical, regular, always distended, that the blood precipitates itself with rapidity, even as far as into the auricle, from the superior parts of the head

and neck. It is here that all the sanguineous molecules, precipitated from the superior part, oscillate, vibrate, and at the same time produce this venous murmur which you hear principally to the right and behind the clavicle, at the head of this sort of general outlet, in which they vibrate and speak the liquid molecules agitated in so many different senses. These vibrations transmit themselves to the upper parts; and thus it is that we can, under the form of sound and of hydraulic vibrations, perceive them at the left side, and especially as far as the middle and upper right side of the neck. It is doubtless unnecessary to recall to you that the transmission of vibrations is effected to an enormous distance, especially in the direction of a liquid current, and that the blowing murmurs of a large pectoral artery is still very perceptible in the popliteal region, and even to the foot. In the experiments which have been made upon this subject, there has been much room for astonishment at this power of transmission, and it thus often becomes a cause of serious difficulty in the detection of the location of murmurs. Such is the entire physiological explanation of the production of sounds; an aponeurotic arrangement accounts for it perfectly, and it is very easy to comprehend why the vibration does not produce itself at the left, and why it is heard there only by transmission.

Let us return now to the second condition which we have to examine, to the influence which the composition of the blood exercises upon venous sounds.

When this liquid, I have already stated to you, is modified in such a manner that it wets the walls of the vessel which encloses it, its flow is accelerated, and a sound is produced. It has been demonstrated perfectly that the intensity of the murmur produced by venous liquid is proportional to the rapidity of the flow of the liquid, and the more readily the liquid moistens the walls, and the more rapidly it flows, the more intense is the murmur; likewise the more aqueous the blood, the less dense is it, and the stronger is the venous blowing. It will appear, especially in all its intensity, if you augment the rapidity of its flow by stretching the aponeuroses of the neck

by a favorable position. Then, also, there can be felt with the finger the peculiar thrill to which I shall revert, and which consists in a series of undulations which transmit themselves to the ear, by a continuous sound with swells, or by musical sounds to which different appellations have been given.

If it is desired to analyze these murmurs, it is perceived that they consist of two sounds, the one continuous, the other intermittent, of a uniform tone, which is dominant, and of a modulated tone which varies incessantly. It is easy to give a clear and natural explanation of this phenomenon. When a cord is made to vibrate upon a sounding-board, and sand is caused to fall upon this latter, then are produced swellings and constrictions, with the same note; the same thing takes place in a liquid which vibrates. Two sorts of vibrations are observed—the one uniform, the other intermittent, abrupt—hence the modulated murmur of the arteries, the murmur *de diable* (devil), *de souffle* (bellows), and other names more or less incorrect, which are made use of to designate these sounds. In order to be familiarized with these phenomena, and to have the satisfaction of hearing sounds the most varied and agreeable, it is only necessary to place the ear upon a tube in which a liquid is caused to flow, whilst varying the velocity of its flow, there are reproduced, at once, the most varied intonations. They are recognized in the sounds so varied of this hydraulic organ, whose tones often surpass in beauty those of the wind-organ. I will not dwell upon all these facts, which belong rather to the domain of acoustics than of medicine.

The vibratory thrill, which accompanies the venous murmur, is perceptible to the finger. It imparts a sensation similar to that which is experienced when a cord, making solid vibrations, is touched; the liquid which flows and vibrates in the vein may be accurately compared to this vibrating cord. The vibratile thrill is nothing else than the series of solid undulations of water or of blood transmitted directly to the hand. The continuous, modulated, venous

sound, or that with continuous and intermittent strokes, is the sound which this same solid undulation produces and determines.

There is, then, always certainly to be found united at one and the same point the sound and the vibratile thrill.

The phenomena which I have just indicated, and the interpretation which I have given of them, are so real that they can be reproduced upon the dead body.

Censure has recently been cast upon the comparison sought to be established between the venous sound produced experimentally upon a dead body, and that which is observed in the living. I am sorry for those who find in this neither resemblance nor pleasure; for it is identical both in sound and tone. To deny this identity is to prove that the endeavor to reproduce these experiments has not been made.

When we are so fortunate as to be able to reproduce upon a dead body, with perfect exactness, the phenomena which occur in the living, we are right, it appears to me, in deciding upon the identity of the cause which produces them.

Open the jugular or the carotid of a dead body, fit into the vessel a tube of caoutchouc, which communicates with a reservoir above furnished with a stop-cock: in order to determine a continuous musical sound, it will suffice to open, more or less freely, the vessel, and to give passage to the liquid, after it is certain that the flow is effected with facility. When, in order to increase or diminish the velocity of the flow of the liquid, the body is inclined, at the same instant there is heard a sound very intense and modulated, which is nothing else than the venous sound which has just been produced.

Not only is the sound heard, but also the molecular vibrations are perceived, of which Cagnard-Latour has indicated the mechanism, and which he has designated under the name of rotary molecular murmur.

These vascular murmurs may be imitated so well that they may be listened to for a long time and with pleasure. The true causes of the murmur are apparent to the eye. If it is desired to render the murmurs continuous or intermittent, it

suffices to render the flow more or less rapid: if it is desired to render it more or less strong, it suffices also to increase or diminish the velocity of the current, and that is easy, it being necessary only to vary the inclination of the body or the pressure of the liquid.

If the body is horizontal, a feeble murmur is heard; if, on the contrary, the inclination is such that the speed may be considerable, the murmurs are so intense that they offend the ear, and the more rapidly the liquid flows the more the intensity of the murmur augments, the more decided becomes the tone, and the more intense the vibratory thrill.

In these experiments it is also perfectly easy to verify the other proposition which has been announced: the intensity of the sound is directly proportional to the velocity of the flow of the liquid, and inversely proportional to the opening made in their walls. That is to say, the more rapid the flow the louder the sound, and that, on the contrary, the more contracted the orifice the less intense the murmur.

These are indisputable facts, which admit not the least doubt. Physicians unconvinced by experiment should decide upon them. Certain authors interpose a third cause in the production of vascular sounds; they assume that the wall of the vessel is a little flaccid, loosened, relaxed, and that there are formed in its interior little projections, folds, wrinkles, which originate the continuous venous murmurs; without these little obstacles they can not comprehend the possibility of a murmur. They are completely deceived. In 1850 I was carried away very decidedly, without being committed to it, towards this theory of flaccidity. Now I have come around to this position, that, in science it is always permitted to modify opinions, and to lay aside that false pride which urges one never to say no, when he has once said yes.

In examining anew the theory of which I speak, or rather this modification of it, which appeared to me sufficient to explain these vascular murmurs, I discovered that it was impossible; and moreover no one has demonstrated this

pretended flaccidity of the vessels of the neck, even among chloro-anæmic subjects it has been assumed gratuitously.

Savart, whose authority in physics can never be annulled, after experiments of equally extreme delicacy and precision, by reason especially of the acoustic capacities of his ear, which enabled him to notice intonations, modifications of sound, where no one else would ever have perceived any, had arrived at the belief that the flaccidity of the walls, which receive and transmit, renders them more fit to receive and transmit, but not to produce them. He has proved it by augmenting and diminishing the tension of a membrane; by producing a detached sound, he remarked that the intensity of the vibration increased when he relaxed the membrane, and that it became, on the contrary, more and more feeble as he stretched it, as is seen in the membrane of the tympanum when prepared to receive feeble sounds. There is then a tendency in flaccid membranes to vibrate more readily, in unison with sonorous bodies placed in their vicinity.

The venous walls could enter into a state of vibration if they were free and stretched; but it is sufficient to ruin this doctrine, to notice that the venous membrane is every where adherent by one of its surfaces to the surrounding tissues.

Moreover, it asserts that the walls of the veins in chlorotic and anæmic subjects are far from being flaccid, and especially recall this principle, that there is no vacuum in the organism.

Bleed an animal to whiteness, he falls inanimate; return the blood to the brain by suspending him by the hind legs, the animal revives immediately; if it is left in this position, reparative nature carries the fluids from every point in the organism into the vessels, effects the re-absorption of the serosity of the different fluids, and thus brings them back into the circulatory system. Open now the vessels, the circulatory system is found as full as before; the loss of blood which has been sustained is hardly perceptible. The same thing occurs in the case of one wounded, who has lost a large quantity of blood; as also in that of the parturient woman who has sustained a considerable metrorrhagia. Subjects so anæmic as to

be considered dead, nevertheless returned to life, and soon after their veins were found distended with blood.

After a copious bleeding the vessels are still full and distended; the blood is, however, much paler, because the globules are diminished. There is no vacuum in the organism, and especially in the circulatory system, since another liquid comes immediately to replace the blood; flaccidity can not exist.

I have already stated that Savart had demonstrated the relations of consonance of a relaxed membrane, with one which is stretched vibrating in unison; and this consonance any one may establish for himself, when, in a theater, for example, one attempts to appreciate the most delicate tones. The membrane of the tympanum is then relaxed, and unconsciously the attempt is made to harmonize the most feeble vibrations which come to the ear. In a word, the tympanum has been rendered more flaccid, as Müller and many other physiologists have demonstrated.

But, as has been said already, this flaccidity can not be admitted for the veins of the neck. The walls of the veins are not free; one surface adheres to the aponeurosis, the other is in immediate contact with the blood.

Now Savart always made his experiments upon membranes with a free surface, and the walls of the veins of an anæmic subject should be flaccid, in order that they might be able to vibrate.

It may be objected, it is true, that the flaccidity does not exist, but that there is a liquid which transmits to them immediately sonorous vibrations which originate there. That would be possible indeed if they could originate exteriorly; but they originate in the vein from the collision of the sanguineous molecules.

(To be continued.)

INTERNATIONAL MEDICAL CONGRESS,*

CONVENED AT PARIS, AUGUST 16, 1887.

TRANSLATED EXPRESSLY FOR THE JOURNAL BY PROF. FREER.

THE banquet was largely attended, but an air of sadness prevailed. The death of Velpeau — the news of which had been received too late to render it possible to delay this fête — gave an expression of mourning to the entire assemblage.

M. Bouillaud drank to the First International Medical Congress.

M. Palusciano drank to the health of President Bouillaud ; which was highly applauded, and with justice.

M. Bouillaud had entered into the necessary work for the success of the Congress with his whole soul. One could see from the first that he deplored the restrictions that the programme — much too minute — imposed upon the discussions.

We reproduce the speeches of M. Bouillaud and M. Palusciano :

M. Bouillaud. GENTLEMEN : — What finer spectacle than the sessions of this assembly ! It recalls, in spite of us, that which Cynéas saw when he took the Roman senate for an assemblage of kings. What saw then — said the master of French eloquence (J. J. Rousseau) — what saw then Cynéas that was so majestic ? He saw the most beautiful spectacle that had ever appeared under the heavens : the assemblage of two hundred virtuous men, worthy to command Rome and the earth.

The spectacle of our medical senate is not thus sublime. It is not that of the masters of the world ; but it is an assembly of more than seven hundred physicians, worthy to serve as models for all assemblies of savans and of sages. Salute, then, our first International Medical Congress.

* Continued from the December Number.

M. Palusciano.—It is not permitted to ourselves to appreciate the work that we will have achieved. The world and posterity will judge. But that which we can verify, is that the idea of a reunion of medical men of all nations for the purpose of discussion is a veritable progress. Our programme has been followed with exactness and fidelity, due to the lively interest and eminent qualities displayed by our honorable President.

In the medical world, no one ignores the important progress for which science is indebted to this learned professor of clinics of the faculty of Paris. And the most of us already know the biography of this indefatigable laborer, who is the honor of the medical faculty of France.

We wish, then, that all future medical congresses may be presided over by like veterans of progress and liberty; and in order to thank him, let each repeat, in his own proper tongue, *Vive Bouillaud!*

COMPLEMENTARY SESSIONS.

At a complementary session on Thursday evening, the 22nd August, M. Brunetti exposed his new method of

PRESERVING ANATOMICAL SPECIMENS.

His method comprises many complicated operations, comprising washing, removing the fat, tanning, and dessication.

The pieces are washed by passing pure water through the blood vessels and different excretory ducts; then the water is removed by passing alcohol through the same channels; following this with ether, in order to the removal of the fat. Having arrived at this point, the piece may be plunged in ether and kept an indefinite time before subjecting it to the subsequent processes, or tanning.

This is accomplished by dissolving tannic acid in boiling distilled water, a saturated solution, and by injecting the solution in the same manner as above, after having chased out the ether by means of injections of distilled water.

The final operation is that of drying the piece, which is attained by passing a heated atmosphere through the vessels and ducts of glands.

The specimens are flexible, light, retain their volume and natural relations. The histological elements are solid, for the liquids have been replaced by the tannic. These pieces can be handled without fear of injury, and may be preserved indefinitely.

After M. Brunetti, M. Laskanski presented some anatomical pieces which were wonderfully preserved, and which had the advantage of retaining the natural aspect respecting suppleness and all other qualities of normal tissues. Unfortunately, M. Laskanski was not prepared to make a revelation of his method of preparation, merely divulging that *Phenic acid* constituted a part of the liquid used in making the injection for the vessels.

The complementary sessions being destined for communications foreign to the primitive programme, were occupied by subjects that had had no relation to each other. Some of them were of real importance. We will speak of that on the subject of the

PROPAGATION OF CHOLERA.

M. Shrimpton observed that the characteristic and constant symptoms of cholera were: 1st. Abnormal cold. 2nd. Alteration of the respiration and non-oxygenation of the blood. 3rd. The intestinal flux. According to him, all the primary phenomena are explained by the asphyxie of the elementary tissues. As soon as the choleraic influences have ceased, reaction may occur even after decease, that which proves that this reaction and the morbid action which preceded have for their seat the cells, the life of which persists still a certain time after the termination of general life.

We can not follow M. Shrimpton in the development of his theory, only adding that he supports the non-contagion theory.

The convictions of M. Shrimpton upon this subject are very firm, as we can see by the following extract:

"Cholera can not be contagious, because the choleric can not carry on themselves the germs of the contagion. To carry the germs of contagion, supposes a labor of elaboration, a period of incubation, such as take place in acknowledged contagious maladies, such as the typhus, yellow, and eruptive fevers. Now this can not take place with those affected with cholera, for as soon as patients are affected with cholera influences, all organic action ceasing, the choleric influence must necessarily extinguish itself in each person, whatever may be their number. Respecting myself, I ask, for instance, that our illustrious President, M. Bouillaud, and our learned Vice-President, M. Ricord, conjointly with my honorable colleague of the Hospital Gagliani, may form a commission, to which they may add a delegate from each foreign country, now in Paris, to submit me to all the proofs they may desire to indicate. I will go to bed with a person in the active stage of cholera, will respire his breath as long as the commission may deem it necessary; I will inoculate myself with all the matter proceeding from the body of the patient; in a word, I will submit myself under their eyes to all that may be demanded to carry conviction of the non-contagiousness of cholera to the entire world."

M. Crocq.—"If I speak, it is not for the purpose of opening the question of the nature of cholera, which would require too much time. Notwithstanding, I must say that in most cases, if not in all, the abdominal phenomena designated as premonitory precede the phenomena of asphyxie. These latter constitute neither the essence nor the point of departure of the malady.

"I but throw out this remark, in passing, the time not permitting us to attack this important question."

"My object in speaking is to protest against the doctrines of M. Shrimpton relatively to its contagion. It is very easy to declare that cholera is not contagious; that one must not fear it; that one may confront its contact with impunity; but it is necessary, above all things, to know the truth, even when it may be disagreeable. Besides, know well the enemy that

one has to face, and avow the fact of contagion if it possesses it, than to dissimulate. Fear not that the choleric patients will lack attendance because physicians may recognize the contagiousness of their disease. Do we not care for other contagious and infectious diseases, at the time recognizing their transmissibility? No, gentlemen, the true physician does not recoil before contagious maladies; he knows that which his obligations command, and does not fail to execute.

"Be not astonished, then, to hear me proclaim the contagiousness of cholera. Numberless observations have convinced me of this. M. Shrimpton has informed us that he is ready to inoculate himself with the blood or any fluids whatever of the *cholériques*. That amounts to nothing with me as a contagionist; I am ready to submit to the same ordeal; and I am sure it would contribute to valuable results in the enlightenment respecting the problem of contagion or non-contagion."

AFTER-TREATMENT IN NECROSIS.

BY PROFESSOR GUNN.

At an early period in my professional experience, I encountered the necessity of secondary operations in certain cases of Necrosis. After the usual operation and dressing, while the limb would improve in general appearance, the wound would fail to completely heal, or, if it did heal, it would reopen in a short time. Examination with the probe would detect a piece of necrosed bone, which usually was insignificant in size, but which prevented healing, and necessitated a new opening of the wound for its removal.

Having encountered this experience in several instances, I was led to an examination of some specimens of this disease when the sequestra were contained in separate compartments of the capsula sequestralis, but between which there was a free communication.

In an operation on such a case, the surgeon would probably open the main chamber or compartment, remove the main sequestrum, and fail to detect one or more, which were smaller, and lodged in small side alcoves or compartments, and which, after the removal of the main piece, would naturally work, in the course of a few days, into the place which it had occupied. It is a well recognized fact, that reparative nutrition tends to the pushing out or off of foreign material. Thus, these remaining sequestra would come to occupy the place of the main sequestrum on their route out of the body.

To secure their final expulsion without an additional operation, I devised the plan of introducing into the opening through the walls of the capsula sequestralis, made for the removal of the main sequestrum, a plug or tent of white wax, which fitted the opening pretty accurately, without so completely filling it as to obstruct the flow of pus. This plug is removed daily, it and the wound are cleansed, when it is reinserted. At each dressing, the wound is explored with the finger, and when additional sequestra are detected, they are removed. After they have all come away, or, if they have all been removed at the time of the operation, the fact will be indicated by the gradual filling of the chamber by firm, healthy granulations, after which time the plug may have a piece cut off from its bottom at each dressing, until it is all cut away, and the wound has healed to the surface.

Under this plan of treatment, it has often been my experience to detect and remove one or more pieces of dead bone within the first two weeks after the operation, which had eluded discovery at that time. The tardy growth of the granulations compelled by this style of dressing, secures a firm and healthy healing progress from the very bottom of the wound.

BOOK NOTICES.

MECHANICAL THERAPEUTICS. A Practical Treatise on Surgical Apparatus, Appliances, and Elementary Operations, embracing Bandaging, Minor Surgery, Orthopraxy, and the Treatment of Fractures and Dislocations. By PHILIP S. WALES, M.D., Surgeon U.S.N. With 642 Illustrations. Philadelphia: Henry C. Lea. 1867.

A good book, and well calculated for the purpose it is intended to accomplish.

Surgeon Wales lays no claim to the making of a book "all out of his own head," but in this volume gives us an epitome of the practical experience of himself and others, in the briefest possible form, compatible with practical usefulness.

Part 1st Treats "of the Appliances of Dressing."

Part 2nd Treats "of Mechanical Bandages and Apparatus."

Part 3rd Treats "of Fractures, their Reduction, Dressings, and Apparatus."

Part 4th Treats "of Dislocations, their Reduction, Dressings, and Apparatus."

Part 5th Treats "of the Minor Operations in Surgery."

The illustrations are full, and the description of the form and mode of application of the numerous apparatus and appliances of the art of surgery so complete, that it seems to us that any one with an ordinary amount of surgical knowledge and mechanical skill may, with the aid of this volume, be able both to select and apply the proper apparatus, so as to secure all the benefits possible in any given case.

In our opinion, it is a good book, and one which every student and practitioner needs in his library. Especially would its value be appreciated by the surgeon whose field of

practice is any wise remote from the larger cities, and where he has no full assortment of apparatus from which he may select in the treatment of particular cases.

Typographically, it is like all the books from this publisher—a success.

A BIENNIAL RETROSPECT OF MEDICINE AND SURGERY, and their Allied Sciences. Edited by MR. H. POWER and DR. AUSTEE, *et al.*, for the New Sydenham Society. Philadelphia: published by Lindsay & Blakiston.

ON DISEASES OF THE LUNGS AND AIR PASSAGES; their Pathology, Physical Diagnosis, Symptoms, and Treatment. By HENRY WILLIAM FULLER, M.D., Cantab., F.R.C.P., London, Physician to St. George's Hospital, etc., etc. From the Second and Revised London Edition. Philadelphia: Henry C. Lea, publisher.

The reputation of the first edition of this work is a sufficient guarantee of the value of this revised edition. Parts III. and IV., relative to diseases of the heart and great vessels, which made up a portion of the first, have been omitted in the second edition.

COMPENDIUM.—Among the very best of our exchanges, we count the *Reporter* of Philadelphia. Edited by S. W. BUTLER, M.D.

We notice with pleasure that the able and industrious editor has prepared a "Compendium," which is of the very highest order. It is the abstract and essence of the time, and we commend it strongly to the patronage of our readers. Having, unfortunately, mislaid the Prospectus, we are unable

in this No. to give the terms, but will do so in our next. Meanwhile, we are content to advise our readers to address the Editor, S. W. Butler, M.D., 115 South Seventh Street, Philadelphia, enclosing, if we remember, \$3, and receive in lieu one of the best works of the kind in the English language.

We will furnish the *Reporter* and this JOURNAL for \$6 a year to advance-paying new subscribers, or the JOURNAL and "Compendium" for \$5.

OPHTHALMIATRISCHE BEOBAHTUNGEN. VON DR. MED. ALBERT MOOREN, dirigirendem Arzt der Staedtischen Augen-Klinik zu Duesseldorf. Berlin, 1867. Verlag von August. Hirschwald, Unter den Linden, Nr. 68, pp. 345.

This volume is a report of the Clinical observations of Dr. Mooren in one of the richest Ophthalmic Clinics in Europe. It is a report of general results, rather than of special observations, and is arranged under sixteen chapters, as follows:

I. Clinical Statistics. II. Diseases of the Orbit. III. Diseases of the Lids. IV. Diseases of the Conjunctiva. V. Diseases of the Lachrymal Apparatus. VI. Diseases of the Cornea. VII. Diseases of the Sclerotic. VIII. Diseases of the Iris. IX. Diseases of the Choroid. X. Diseases of the Vitreous Body. XI. Diseases of the Lens. XII. Diseases of the Retina. XIII. Amblyopia. XIV. Amaurosis. XV. Disturbance of Accommodation. XVI. Diseases of the Muscles.

The scope and style of the work is novel, at least to us, and is highly illustrative of the great labor and satisfactory results of that labor, which has been performed in the wide field of Ophthalmology in the last few years. In no department of medicine have its devotees been more earnest than in this, and certainly in none have the results been more satisfactory.

SPERMATORRHŒA: Its causes, symptomatology, pathology, diagnosis, prognosis, and treatment. By Roberts Bartholow, A.M., M.D., Prof., etc., etc. Second edition, revised and augmented. New York: William Wood & Co., 61 Walker street. 1866.

PENNSYLVANIA HOSPITAL REPORTS, Vol. I. 1868. Philadelphia: Lindsay & Blakiston. Pp. 420.

DISEASES OF THE HEART: Their diagnosis and treatment. By David Wooster, M.D., etc. San Francisco: H. H. Bancroft & Co. 1867. Pp. 216.

A PRACTICAL TREATISE ON THE DISEASES OF CHILDREN. By D. Francis Condie, M.D., etc., etc. Sixth edition, revised and enlarged. Philadelphia: Henry C. Lea. 1868. Pp. 773.

OBSTETRIC CLINIC: A practical contribution to the study of Obstetrics and the Diseases of Women and Children. By Geo. T. Elliott, Jr., A.M., M.D., Prof., etc., etc. "*Plus on s'élève, plus l'horizon s'étend.*" New York: D. Appleton & Company, 443 and 445 Broadway. 1868. Pp. 458.

HYSTERIA: Remote causes of disease in general, treatment of disease by tonic agency, local or surgical forms of hysteria, etc. Six lectures delivered to the students of St. Bartholomew's Hospital, 1866. By F. C. Skey, F.R.S., etc., etc. New York: A. Simpson & Co. 1867. Pp. 103.

ANNUAL REPORT of the Trustees and Superintendent of the Wisconsin State Hospital for the Insane, for the year ending September 30, 1867.

L O O T.

THE *Galveston Medical Journal* (Prof. G. Dowell), recommends in cases of poisoning by *Rhus Toxicodendron*, and other poisonous species of the *Rhus*, to bathe the parts with a solution of caustic potash, sufficiently strong to render soapy the skin. This "has never failed to cure it immediately," although he has used it in hundreds of cases, including himself. The potash is used in the proportion of ten grs. to the ounce of water, but may be increased in strength as needed. A stronger solution will relieve the effects of the same poison upon the skin of animals.

F. B. Greenough, M. D., of Boston (*B. M. & S. Jour.*), in an article on *Gonorrhæal Rheumatism* observes: "With regard to treatment, perfect rest is the most essential part. If the pain is severe, two or three leeches may be applied with relief. Evaporating lotions may also be tried. When there is an effusion into the joint, the part may be rubbed with a salve containing iodine or iodide of potassium. If resorption does not take place, compression should be used, either by bandages, or still better by compressed sponges. All authorities agree that the remedies which have been supposed to be beneficial in rheumatism, such as the alkalies, colchicum, iodide of potassa, etc., have no influence in this affection. Perhaps it is lucky for us that the differential diagnosis is not dependent on this fact alone. The urethral trouble must be treated exactly the same as it would be if no articular complication existed."

A correspondent of the same journal furnishes an abstract of a paper before the French Academie Imperiale de Medicine, by Prof. Semola of Naples, on *Bright's Disease*, which

concludes: "According to this author, Bright's Disease is not the result of a primitive anatomical lesion of the kidneys, but is a result of the double series of effects [prevention of the oxidation of the materials introduced into the system in the form of peptones (the products of the digestion of albumen), and resulting congestion of the viscera, especially of the kidneys] which succeed the more or less sudden suppression of the functions of the skin. The aim of the physician should be to re-establish these functions, and thus increase oxidation of the peptones, and relieve the renal congestion. Among the means best suited to this purpose are the ordinary sweatings, or, in obstinate cases, hot air baths, always followed by cool or cold shower baths; preparations of arsenic, and inhalations of oxygen. The diet should be vegetable or starchy, with but very little meat."

The *Abortive Treatment of Typhoid Fever* by repeated blistering over the iliac region is revived by Dr. Strong of Buffalo, and the editor of the *Pacific Medical Journal* is inclined to concur with him. The latter observes that this method has been employed by other California physicians. He also suggests that other topical means may be resorted to.

The *Brown Cod Liver Oil*, it is still insisted by some, is the most efficient because it contains the most biliary matter.

Maisonneuve treats *Mammary Cancer* by a new method. He passes a bistoury into the tumor, and afterward inserts slips ("arrows") of dried chloride of zinc and flour into the cavity, where they are allowed to remain and gradually dissolve, this usually requiring about ten days. The slips are made by mixing equal parts of the chloride and flour. The paste thus formed is dried, and the slips cut of the size desired. The pain is said not to be very great, and the effect is to kill the tumor by mummifying the tissues. The process is designated *cauterization en fleche*, and seems to have points of superiority over that adopted by the colored gentleman whose

exploits in cancer curing a few years since are still remembered in Paris and elsewhere.

Dr. Durkee (B. M. J.) recommends common soft soap, well rubbed in, as the best application for *Scabies*.

Acetic Acid injections into *Cancerous Tumors*, according to the report of two cases by Fred. D. Lente, M. D., of Cold Spring, N. Y., (N. Y. Med. J., Dec., 1867,) do not seem to sustain the encomiums lavished upon them across the sea. Though great care was taken, and the cases themselves favorable, the result was failure in each.

Permanganate of Potash, gr. ss to the ounce of water, is recommended strongly as a gargle in Diphtheria. "Its use should be accompanied by ferruginous tonics, wines and careful nourishment." True. *Carbolic Acid* is also commended for this purpose.

Mr. Charles Sedgwick, in the *Medical Times and Gazette*, prescribes the following form: \mathcal{R} Acid, Carbolic Mxx; acidi acetici, half a fluid drachm; mellis, two drams; tinct. myrrhæ, two fluid drachms; aquae q. s. to six fluid ounces; mix and make a gargle. The carbolic and acetic acids to be well shaken together; the honey to be added to the water gradually. Internally tincture of iron and quinine."

Dr. Lortet (*Reporter Periscope*) has administered in a few cases of *Tape Worms*, which had resisted the usual remedies, *Sulphuric Ether*, which apparently acted upon them as it does on man, as an anæsthetic, rendering them insensible, when they are easily removed by a mild purgative. The plan is to give five drachms of ether at a dose, and to follow it in two hours by an ounce of castor oil. The worm is discharged without causing pain, entire or almost so, and always with the cephalic end intact. Though but few have been thus treated, the practice is worth bearing in mind.

Quite a range is it in the treatment of *Gonorrhea* from argent. nitrat. forty grs. to the ounce, down to the latest proposed lavement, which is finely powdered starch mixed with lukewarm water to the consistence of cream, but thin enough for injection. Yet M. Luc (*Lond. Lancet*), military surgeon, finds it excellent either in painless discharges or when the inflammatory stage is over.

Nutrition.—Dr. Lionel Beale believes that the serum of the blood is the nutritive pabulum of the body; that the red corpuscles are concerned in its distribution and in preventing changes in the composition of the great mass of the blood as certain constituents are removed from or poured into it; that the white corpuscles are masses of germinal matter concerned in the formation of the serum as well as of the red corpuscles; and that the special products of nutrition depend not so much on the characters of the pabulum as upon the *converting* powers of the germinal matter throughout the textures and which *appropriates* from the pabulum the materials it requires. The red corpuscles have therefore assigned to them a secondary position as agents of nutrition. The principal argument in support of this is derived from the fact, that elaborate tissues are formed in animals which have no colored blood corpuscles. According to Beale, three distinct phenomena are involved in nutrition. 1. The contact of the soluble pabulum with the germinal matter of the tissues. 2. The separation of the elements of the pabulum from their state of combination. 3. The rearrangement of these elements and the conversion of some of them into new germinal matter.—*Journ. Anat. and Phys.*, Nov. 1867, from *Quarterly Jl. of Microscop. Sc.*, July, 1867.

Pepsine in Vomiting of Pregnancy.—M. Gross has used pepsine in doses of eight grains before meals, with complete relief, in a case of obstinate vomiting in pregnancy.

EDITORIAL.

WITH this number commences the Twenty-Fifth Annual Volume of this Journal, and it is with unmingled pleasure we undertake both its enlargement and more frequent issue. In these times the monthly bears about the same relation to the real wants of the profession that the semi-annual did a few years since. When the means of communication between the different parts of the country and the world were more limited, the thoughts of men were slowly concentrated, and the Medical Journal was obliged to depend on the professional contributions of those within its own limited sphere. Now the learned, observant and experienced, every where about the globe, can speedily bring together whatever of the new, and possibly true, they have gathered up, and cast them into the crucible of universal analysis. The Present becomes its own sharply interrogating and impartially judging Posterity.

The Profession, having thrown off the trammels of old-time dogmatism, can not wait the slow processes of antiquity. It must move in the van of the grand march of Progress which distinguishes the age. It is needless to say that, for this purpose, the means of communication between its members should be facilitated to the greatest possible extent.

For this, among other reasons, the JOURNAL advances from the monthly to the semi-monthly—anticipating the not distant future when this will be replaced by the weekly, and within the next quarter centennial period by the daily.

If it were not for the editorial horror of elongated articles, in this age of telegraphic conciseness, there would be more written here on this point, but why “carry coals to Newcastle?” This semi-monthly is already an established fact, and its success as such placed beyond contingency.

The Editor congratulates his subscribers, both old and new, on the advanced position, and extends to them the salutations of the New Year.

TO CORRESPONDENTS.—To insure early insertion of your favors it is necessary that they should be condensed to the last limit of perspicuity. Many articles, containing much of real value, have lingered long in the editorial "pigeon holes," because failing in this essential particular. The readers of the JOURNAL, we are proud to know, are well up in the text books and standard treatises. They do not need these elaborated, re-worded, or even quoted. A little reflection on this point will save a great deal of unnecessary manuscript, and, what is of more importance, be vastly more likely to secure careful reading of the communication. Short and pithy articles are read, whilst long ones are postponed to some rainy Sunday or day of leisure, which rarely occurs to the busy gentlemen who take the JOURNAL.

PROCEEDINGS OF MEDICAL SOCIETIES.—Thanks are returned to friends who have forwarded memoranda of the transactions of their local organizations. That these have not been published in the JOURNAL has not been from want of proper appreciation of their kindness, or deficiency in respect, but simply from physical impossibility. Since the present Editor has been in charge of the JOURNAL, the number of these communications received has been such, that to have published them would have absolutely excluded all other matter. Abstracts of valuable papers, or the papers in full, if not too lengthy, will be cheerfully inserted whenever opportunity offers.

THE INTERNATIONAL CONGRESS.—We omitted to mention in the last No. of the JOURNAL, that we are indebted for the original translation and abstract of papers and discussions

before the International Medical Congress, to the busy pen of our distinguished colleague, PROF. J. W. FREER, who was himself present as a member of the body.

The series, as a whole, will be read with interest by those desirous of knowing whereof the medical world is thinking. The topics discussed were, in the main, of the most important character.

THE PRESENT RAID ON THE UTERUS.—The following extract from the address of Dr. W. D. Buck, before the New Hampshire Medical Society, is copied from the *St. Louis Medical Reporter*: "The uterus is a harmless, inoffensive little organ, stowed away in a quiet little place. Simply a muscular organ, having no function to perform save at certain periods of life, but furnishing a capital field for surgical operations, and is now-a-days subject to all sorts of barbarity from surgeons anxious for notoriety. Had dame Nature forseen this, she would have made it iron-clad. What with burning and canterizing, cutting and slashing, and splitting, and skewering, and pessarying, the old fashioned womb will cease to exist, except in history. The Transactions of the National Medical Association for 1864, has figured in 123 different kinds of pessaries, embracing every variety, from a simple plug to a patent threshing machine, which can only be worn with the largest hoops. They look like the drawings of turbine water-wheels, or a leaf from a work on Entomology. Pessaries, I suppose, are sometimes useful, but there are more than there is necessity for. I do think this filling up the vagina with such traps, making a Chinese toy-shop of it, is outrageous. Hippocrates said he never would recommend a pessary to procure abortion, nay, he swore he never would. Were he alive now he would never recommend one at all. If there were fewer abortions there would be fewer pessaries, and if there were fewer pessaries there would be fewer abortions. Our grandmothers never knew they had wombs, only as they were reminded of it by a healthy foetus; which, by the by,

they always held on to. Now-a-days, even our young women must have their wombs shoved up, and if a baby accidentally gets in by the side of the machinery, and finds a lodgment in the uterus, it may, perchance, have a knitting-needle stuck in it eyes before it has any. It is the easiest thing in the world to introduce a speculum, and pretend to discover ulceration of the os, and subject a patient to this revolting manipulation once or twice a week, when there is, in fact, nothing the matter. By some practitioners, all diseases which occur in the female are attributed to the uterus. In this class are especially to be included all such as make of the abnormal conditions of the uterus a specialty."

RUSH MEDICAL COLLEGE — SPRING COURSE OF INSTRUCTION.

The spring course of instruction in this institution will commence on Monday, the 2nd day of March ensuing, and extend through three months. There will be daily recitations and lectures, together with unusual advantages for clinical instruction at the various hospitals of the city and the college dispensary. Details will be given in the next number of the JOURNAL. Full information can be obtained by addressing the SECRETARY of the college. See advertisement. Prof. Blaney will open his school of instruction in analytical and applied chemistry at the same time, in the laboratory of the college.

JUCUNDE.

WHILE we deem it of the first importance that the physician in the performance of his duties as a practitioner should consider, first, whether to give; next, what to give; then, how much to give, it is often of no less consequence that he consider well how to give his medicines. A bungling mixture may defeat the object of the most appropriate remedy. And it is worthy of commendation, that the attention of the profession, as well as pharmacutists, is being directed especially

to this too much neglected subject. The manufacture of granules and sugar-coated pills, containing not only the preparations of the pharmacopœia, but many of the more common prescriptions, is a stride in the right direction. Another, of no less value, is the preparation of the more usual and desirable combinations of bark, the various salts of iron, strychnia, and other drugs, in eligible forms for administration as elixirs, syrups, etc. These can often be better prepared in the laboratory of the chemist than on the table of the apothecary, and to be useful in practice, must contain the active principles of the drugs they represent, in precisely the quantities stated in the formulæ.

Many of this class of preparations found in the shops, from the employment of inferior drugs or other faults, are unreliable in strength, and practically worthless.

But while we favor the use of such preparations on the score of convenience and elegance, we can not refrain from a hearty condemnation of empiricism in any of its forms, whether on the part of a superficial or indolent practitioner, who glides into a mere routine, or the druggist who first offers his preparation to the profession, then recklessly gives it to the "public," basely quoting any favorable opinion he may have received from a medical gentleman to aid him in his illegitimate traffic.

We are led to make these remarks from noticing that the firm of Reed, Carnrick & Andrus, chemical manufacturers, New York, are now offering their products in this market. And from the reputation of the house, and the favor with which their medicinal compounds have been received by the profession, where they have been used and thoroughly tested, we believe they are well deserving confidence, and will prove of value to the careful practitioner.

THE next number of the JOURNAL will be issued on the 20th inst.; thereafter, promptly on the 1st and 15th of each month. It will be mailed hereafter exclusively from the Editor's office.